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The Influence of Postevent Credibility in the Report of Eyewitnessed Events

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Previous research dealing with the effects of source credibility on eyewitness' memories has found that sources that are seen as credible by the eyewitness' are more likely to be believed and more often change the witness' original memory than do sources seen as not credible. The present experiment is an extension of the previous research testing if adults that witness an event are affected differently by the misinformation presented by a child (non credible source) or an adult (credible source). Fifty-two people were shown a video depicting a scene of a husband and a wife arguing in their home. They were then given a narrative that contained some misinformation and some correct information about four critical details. Finally the subjects' memory for the original event seen was tested with a standard forced-choice recognition test. Accuracy and confidence levels were measured. The analyses revealed that witnesses were less accurate in the misinformation condition than in the correct condition, $p=.048$. However, source credibility did not affect witnesses accuracy differentially, $p>.05$.

There have been a number of studies that have replicated the misinformation effect. These studies have found that misleading information presented to eyewitnesses after they have seen an original event can change their report for the original event. When researchers test this effect they normally use a three-step procedure. Subjects first view an event, then they receive a narrative about the event that contains neutral or misleading information. Finally, subjects take a test to determine their memory for the original event. Often times, the subjects who are misinformed about a critical detail remember things that they did not originally see because of the misinformation presented.

For example, Loftus and her colleagues (Loftus, Donders & Hoffman, 1989; Loftus & Palmer, 1974) found that subjects who are asked misleading questions often report the false information that was presented in the misleading questions. In one experiment (Loftus, 1975) subjects watched a videotape of a traffic accident and then were given questions about the event. Half of the subjects were asked a question that contained misinformation, specifically that there was a barn present in the video. The other half of the subjects were asked an unbiased question, that is, the barn was not mentioned. The subjects were later asked if they had seen a barn in the original video. The results were that 17.3% of the subjects that received the misinformation said that they had seen the barn, and only 2.7% of the subjects who received the unbiased information reported seeing the barn. Loftus (1975) explained these results by stating that the

misinformation presented alters the witness' original memory, and the information that is later recalled about the original event contains the misinformation.

There is, however, a debate on how the misinformation presented alters the original memory. Loftus (1975) has stated that the misinformation overwrites and replaces the original memory (substitution theory.) In contrast, the response bias theory (Rantzen & Markham, 1992) states that subjects keep an accurate memory about the original event, but report the postevent because they assume that the experimenter knows the story better than they do and may not question postevent information accuracy. When subjects are uncertain about the event or rely on the experimenter's accuracy they are more influenced by the misinformation.

An important question is whether this response bias will also increase with the credibility of the postevent source. One experiment (Smith & Ellsworth, 1987) showed subjects a videotape of a bank robbery and then had trained confederates ask the subjects misleading or unbiased questions. The subjects were told by the experimenter that the confederate had seen the videotape many times, the credible source, or had never seen the videotape, the noncredible source. This experiment showed that subjects were misled significantly more often by the credible source rather than by the noncredible source. In another experiment (Dodd & Bradshaw, 1980), subjects viewed a series of slides depicting an accident. The subjects then read a postevent narrative being told that it was written by an innocent bystander, the credible source, or a person in the accident, the noncredible source. Subjects were less influenced by the misinformation presented by the noncredible source than by the credible source. These results may have occurred because the subjects may have believed that the participant in the accident was biased.

The purpose of the present experiment was to extend on these research by including age in the manipulation of source credibility. We wanted to determine if subjects' report for an eyewitnessed event would be altered if they received misinformation from an adult, the credible source, or from a child, the noncredible source.

Previous research (Cohen & Harnick, 1980) has compared how adults and children are influenced by misinformation presented in questions. The results indicated that the misleading questions had an impact on both the children and the adults. Lampinen and Smith (1995) tested if preschool children were more influenced by a credible source. The children listened to a story with several illustrations. They then watched a videotape of a child or a silly adult, the noncredible sources, or an adult, the credible source, giving either neutral or misinformation. The results showed that children were more influenced by the misinformation when it was presented by the credible adult. Similarly, children's postevent reports may have a different impact, compared to adults'. However, age has not been incorporated as part of the manipulation for source credibility yet.

In order to investigate this, subjects viewed a videotaped scene and then read a narrative with postevent information that was either correct or misleading presented by a credible source (adult) or noncredible source (child). Subjects were then given a forced-choice memory test. The subjects also gave their confidence levels on each answer. There were four critical items (TV, child, drink, weapon). It was predicted that subjects accuracy would be lower in the misleading than in the correct condition. According to the bias hypothesis, it was also hypothesized that subjects would be more influenced by the misinformation when it was presented by the credible source (adult) than by the noncredible source (child) and choose the option presented by the credible source with a higher degree of confidence. In contrast, according to the non-bias hypothesis, subjects would be equally misled regardless of the credibility of the source where the misinformation came from.

METHOD

Subjects

Fifty-two subjects participated in this experiment. The 42 subjects that attended Winona State University earned extra credit for their psychology courses. The other ten subjects were volunteers from the same area.

Materials and Procedure

The experiment utilized a 2 x 2 within

subjects design. The independent variables were credibility of the source with the two levels being the credible and noncredible source, and the postevent information with the levels being the misleading and correct information presented. There were, thus, four experimental conditions. The dependent measures were accuracy and confidence level for the forced-choice test questions.

A one minute video was used as the original event. The video started with a man and a woman verbally arguing in their kitchen. Although not to threaten, the man grabbed a kitchen knife and continued arguing. He eventually walked into the living room, still yelling, and sat down in a recliner. The scene ended when the woman walked away from the argument. The four critical items in the video were (a) television (on), (b) child (present in the scene), (c) drink (can of beer), and (d) weapon (knife). Each critical item was easily and clearly seen. Each subject saw the same video with the same critical items.

The narrative was approximately 453 words and was presented to the subjects in written form. The narrative accurately described the event seen in the video except for the critical items. For each subject, the narrative contained two critical items in a misleading way and two critical items in a correct way. Each narrative contained information presented by the two sources, either credible or noncredible. Each source presented one critical item in a misleading way and one critical item in a correct way. For example, if a subject saw the man holding a knife in the video and received a narrative with the source (credible or noncredible) referring to the weapon as a pair of kitchen scissors (misleading condition), the other half of the subjects received a narrative with the source (credible or noncredible) referring to it as a knife (correct condition).

Two narratives were made to be exactly the same, except for which source gave what correct and misleading information. The same two misleading critical items and two correct critical items were used in both of the narratives. The two different sources presented opposite critical items in the two narratives. For example, if the adult presented the knife (correct) and the bottle of beer (misleading) and the child presented the TV on (correct) and the child absent (misleading) in one narrative, in the other narrative the child presented the knife (correct) and the bottle of beer (misleading) while the adult presented the TV on (correct) and the child absent (misleading). The same thing occurred with the other two narratives except that the opposite objects were correct (child present and can of beer) and misleading (scissors and TV off). This created a total of four different narratives with 13 subjects being randomly assigned to each of the four narratives.

The instructions given with the narrative were very explicit. They were composed of a story and a map of the situation. Subjects were told that the two neighbors that lived across the street also viewed the argument seen in the videotape separately from their homes. Both witnesses had the exact same view of the incident. Subjects were also told that after the argument was over, the two neighbors went outside where they saw each other and started to talk about the incident. The two neighbors decided to tape record what they witnessed in case there was ever a police investigation. The two witnesses did not integrate their two stories into one story, instead they reported what they each saw. Besides using age, one witness, the adult, was made a more credible source by stating that he worked with the disabled and had lived there for years. The other witness, the child, was made a noncredible source by telling the subjects that he just got out of a halfway house and was skipping school when the incident across the street occurred. What the subject received was a transcript of the tape recording made by the two neighbors.

The subjects' memory for the original event was tested by using a standard forced-choice written test. The subjects received complete instructions about the test and were told to pick the answer that was correct according to what they watched in the video. They were explicitly told not to confuse what they saw in the video with the neighbors' transcript. There were four questions about the critical items, one question for each critical item. There were also 21 filler questions on non-critical items. Each question had four choices. For example, if the subject saw the man in the video holding a knife and the narrative mentioned he was holding a pair of kitchen scissors the test options for the question were knife (original), kitchen scissors (misleading), hand gun (novel), and skewer

(novel). After each question, the subjects were asked to express how confident they were that their answer was correct on a 5-point rating scale with 1= unsure to 5= very confident. After the test, subjects were asked to pick which source they rated as more credible, the adult, the child, or both had the same credibility, and state why they felt this way.

The experiment consisted of five parts with instructions presented orally before each stage began. The subjects were told that the experiment concerned domestic violence. Subjects were first shown the video and were told to watch it carefully. After viewing the video, subjects engaged in a 7 minute filler activity consisting of an article on spouse abuse that gave information on what abuse is, who the typical abuser and abused are, why the abused stay, and how the abused can get help. Subjects were asked to read the article carefully. The article contained no personal stories to influence what they previously saw in the videotape. Subjects then received an informational map and one of the four transcripts describing what they saw in the video. Subjects then read another article about how to prevent abuse from occurring as a 7 minute filler activity. Finally, the subjects were given the memory test followed by the credibility form. Each experimental session lasted approximately 40 minutes.

RESULTS

An independent variable check was computed with a related samples t-test to determine if the subjects thought that the adult or the child was the more credible. This was done by using the answers given to the credibility form. As shown in Figure 1, the results indicated that subjects considered the adult as a more credible witness (M= 36%, SD= 48%) compared to the child (M=13%, SD= 34%), $t(51)=2.46$, $p=.01$.

The accuracy data obtained in the forced-choice test and the confidence levels were analyzed separately. The analyses centered on all four critical items. Each subject was given four accuracy scores pertaining to whether or not they got the correct answer in each of the four experimental conditions according to the videotape. This was done to determine if a subject was influenced by source credibility on the misleading or correct information presented in the narrative. The same analysis was done on the confidence ratings.

A 2 x 2 within-subjects ANOVA applied to the accuracy data showed that the misleading postevent information presented significantly affected accuracy on the forced-choice

FIGURE ONE

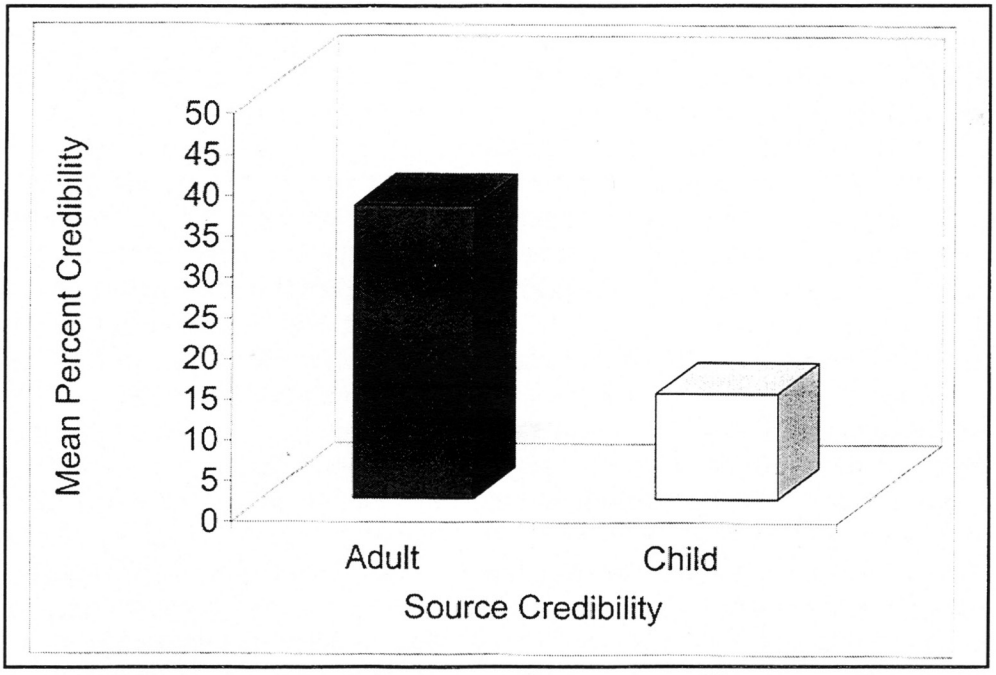

Figure 1. Percent source credibility rating.

FIGURE TWO

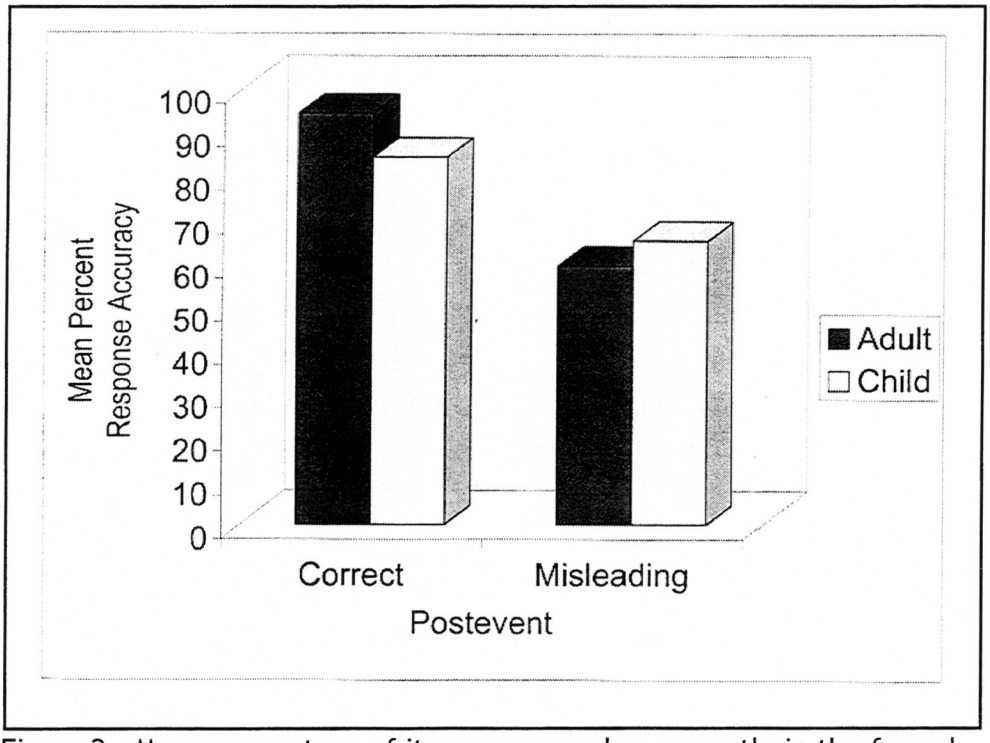

Figure 2. Mean percentage of items answered as correctly in the forced-choice recognition test as a function of source credibility.

recognition test. Subjects were less accurate when they were given misleading information (M= 62.50, SD= 48.79) than when they were given correct information (M=89.42, SD= 29.98), F(1,52)=26.58, p=.00. Thus, the misinformation effect was replicated. However, subjects were not influenced by source credibility. Subjects were equally accurate in both the credible condition (M= 76.92, SD= 36.54) and the noncredible condition (M= 75.00, SD= 42.23), F(1,51)=.09, p>.05. There was no interaction between source credibility and the postevent information presented, F(1,51)=2.04, p>.05. As Figure 2 shows, subjects were not more likely to incorrectly include the misinformation presented in the transcript by the adult (M= 59.61, SD= 49.54) than the misinformation presented in the transcript by the child (M= 65.38, SD= 48.03).

The confidence level for each question was also analyzed using a 2x2 within-subjects ANOVA. The postevent information presented, misleading or correct, did not significantly affect the subjects' confidence levels, F(1,51)= 2.39, p >.05. As shown in Figure 3, subjects were equally confident in both the correct (M= 4.37, SD= 1.05) and the misleading conditions (M= 4.15, SD= 1.13). Credibility of source, credible or noncredible, did not significantly affect the subjects' confidence levels either, F(1,51)= 1.19, p >.05. Subjects were also equally confident when information was presented by the adult (M= 4.34, SD= .97) and the child (M= 4.18, SD= 1.22). The interaction of source credibility and postevent information was not significant either, F(1,51)= 0.13, p >.05.

The next set of analyses were done to determine if the subjects who thought that the adult, the child, or both were the more credible source were more influenced by the misinformation that they each presented. Six 2 x 2 within-subjects ANOVA were computed with the accuracy and confidence ratings of the subjects that believed that the adult, the child, or both were the more credible source.

The subjects that believed that the adult was the more credible source were not more influenced by the adult source (M= 84.21, SD= 34.09) than by the child source (M= 71.05, SD= 45.72), F(1,18)=1.73, p>.05. Subjects were, however, less accurate when misleading information was presented (M=68.42, SD= 47.40) rather than correct information (M= 86.84, SD= 32.41), F(1,18)=5.51, p=.03. There was no interaction between source credibility and the postevent information presented, F(1,18)=.06,

FIGURE THREE

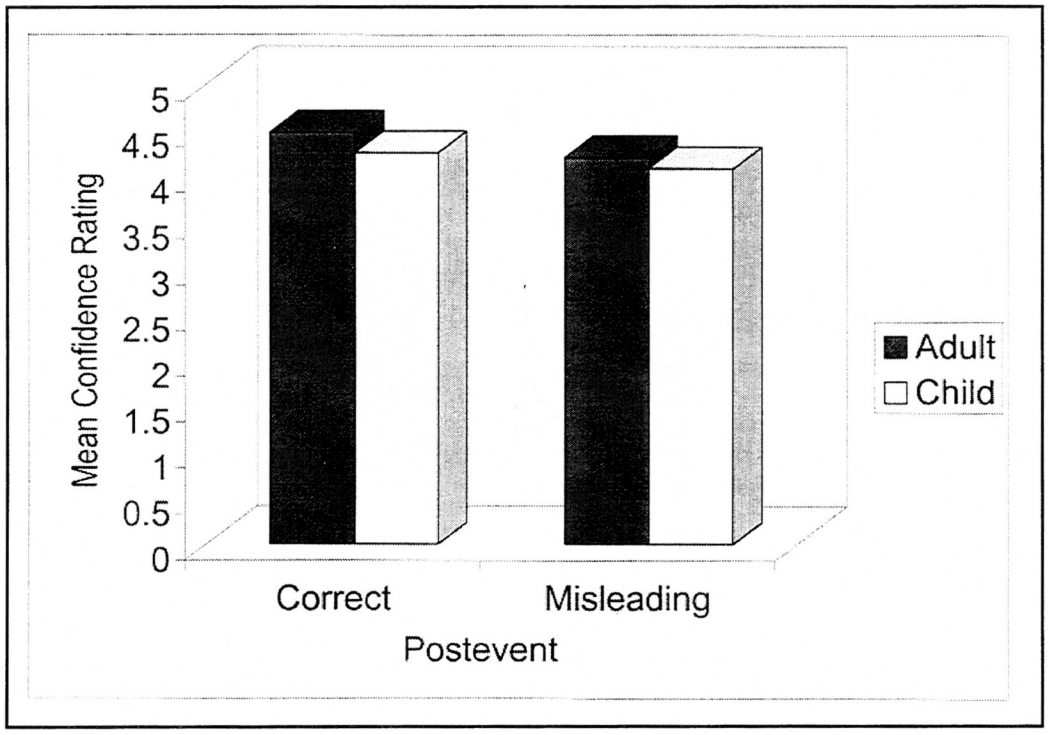

Figure 3. Mean confidence in the forced-choice recognition test as a function of source credibility.

$p>.05$

Subjects who thought that the child was the more credible source were also not more influenced by the credible source (M= 71.42, SD= 26.72) compared to the noncredible source (M=71.42, SD= 45.62), $F(1,6)=0.00$, $p>.05$. However, subjects were also less accurate when misinformation was presented (M= 50.00, SD= 53.45) compared to correct information (M= 92.85, SD= 18.89), $F(1,6)=6.35$, $p=.16$. There was not an interaction between credibility of source and postevent information, $F(1,6)=2.40$, $p>.05$.

The same pattern of results was found with subjects who believed that both the adult and the child had equal credibility. Subjects were equally accurate when information was presented by the adult (M= 73.07, SD= 39.00) and the child (M=78.84, SD= 39.82), $F(1,25)=.38$, $p>.05$. Subjects were more influenced by the misinformation (M= 90.38, SD= 48.95) rather than the correct information (M=90.38, SD= 29.87), $F(1,25)=15.08$, $p=.001$. The interaction was not significant either, $F(1,25)=1.71$, $p>.05$.

All subjects regardless of their credibility rating were equally confident with information presented by the adult and the child, $p>.05$. Confidence ratings were also not affected by the misleading or the correct postevent information presented, $p>.05$.

The next set of four 2 x 2 between-subjects ANOVA analyses was computed to determine if subjects accuracy was influenced differently on the four critical items when they were presented by the credible or noncredible source as correct or misleading. Accuracy on the critical item of "television" was significantly affected by the source that presented it, credible (M= 76.92, SD= 25.94) and noncredible (M= 69.22, SD= 47.24), $F(1,48)$= 6.85, p= .01. However, subjects' accuracy on this item was not affected when it was presented as correct (M= 88.46, SD= 21.92) or misleading (M= 57.68, SD= 51.25), $F(1,48)$= .42, $p>.05$. There was not an interaction between source credibility and postevent information either, $F(1,48)$= 1.71, $p>.05$.

With the critical item of the "child", subjects' accuracy was again affected by source credibility, the adult (M= 88.46, SD= 21.92) and the child (M= 84.61, SD= 35.79), $F(1,48)$= 4.16, p= .04. The way in which this item was presented, correct (M= 96.15, SD= 13.86) or misleading (M= 76.92, SD= 43.85), did not affect subjects' accuracy,

$F(1,48) = .16$, $p > .05$. The interaction of credibility of source and postevent information was not significant, $F(1,48) = .16$, $p > .05$.

Different results were found with the critical item of the "knife". Subjects' accuracy was not affected by source credibility, the adult ($M = 65.38$, $SD = 44.72$) and the child ($M = 76.92$, $SD = 43.85$), $F(1,48) = .87$, $p > .05$, or by the way the item was presented, correct ($M = 64.23$, $SD = 40.70$) or misleading ($M = 61.53$, $SD = 47.87$), $F(1,48) = 2.41$, $p > .05$. There was also not an interaction between credibility of source and postevent information, $F(1,48) = 2.41$, $p > .05$.

With the fourth critical item, the can of "beer", subjects' accuracy was not affected by source credibility, the adult ($M = 76.92$, $SD = 39.18$) and the child ($M = 69.23$, $SD = 44.72$), $F(1,48) = .41$, $p > .05$. The way in which this item was presented, correct ($M = 88.46$, $SD = 32.64$) or misleading ($M = 57.69$, $SD = 51.26$), did affect subjects' accuracy, $F(1,48) = 6.62$, $p = .01$. The interaction of credibility of source and postevent information was not significant, $F(1,48) = .00$, $p > .05$.

The overall accuracy for the 21 noncritical items was 56.15% with an overall confidence rating of 3.23. That is, subjects were accurate only a little over half of the time with a moderate degree of confidence on the noncritical items.

DISCUSSION

In summary, this research has discovered a few important issues. Eyewitnesses were affected by the correct and misleading postevent information even though the critical items were very easy to notice in the video. The findings of this experiment support the numerous studies that have replicated the misinformation effect (Loftus', 1975). Subjects incorporate misinformation into their reports of the original event although, it is unknown why they do this. Interestingly, although the subjects reported significantly more often that they felt that the adult was the more credible source, they were not more influenced by the adult source. Their reasons for picking the adult as the more credible witness were that he described the incident in more detail than the child, he seemed to know what was going on more, he was more educated and had a better job, and the child had just gotten out of a halfway house and was skipping school. These reasons were interesting because the subjects made their decisions of who was the more credible witness based on age and background. The adult did not actually give more details because the details that the adult and child gave were exactly the same in the narratives. This was purposely done to counterbalance the conditions.

The results support the non-bias hypothesis which predicted that subjects would not influenced by source credibility. However, they were not consistent with previous research (Dodd & Bradshaw, 1980; Cohen & Harnick, 1990; Lampinen & Smith, 1995). This may be due to several reasons. First, as stated by the response-bias hypothesis (Rantzen & Markham, 1992) subjects may have assumed that the experimenter knew the video better than they did and may not have questioned whether the postevent information was accurate. As a result, they reported both the correct and the misleading information as part of the original event, as they did, regardless of who said it. This would make the misinformation effect occur without the influence of source credibility, which is what was found in this experiment.

A second possible reason of why source credibility was not significant was that the adult and the child were not looked upon as credible and noncredible enough by the subjects. In the narrative the child could have been made to look more uncredible by saying that he lied about being sick to skip school. This may have made the subjects question his story more because there may be the possibility that he was lying again.

Another interesting finding of this experiment was regarding the overall accuracy on the noncritical test items. Although the recall accuracy was 56%, subjects answered some questions wrong considerably more often than other questions. For example, almost everyone answered the question about where the VCR was located incorrectly, while all subjects answered the question about the woman having no apparent injuries correctly. Clearly, some items in the video were more apparent or stood out more than other items.

Further research needs to be conducted with a different video that contains more items and action in it, to see if subjects are influenced by source. The video shown in this experiment was short, and it did not contain a great deal of

information. This could have let the subjects concentrate on all of the critical items for too long.

Taken together, all of these results implicate that the subjects' report was equally altered by the misleading information presented. Although they found the adult more credible than the child, their reports were not differentially affected by the two sources.

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